

## ENVIRONMENT

# CONSERVATION THROUGH PARTNERSHIP

# U

S.-India cooperation on environment is an outstanding representation of how the bilateral relationship is being transformed. The changing role of the Department of State (DOS) and the United States Agency for International Development (USAID) over the past 50 years in addressing environmental issues and the emergence of new U.S. players in India, such as the United States Environmental Protection Agency (EPA), the Department of Energy (DOE), the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA), show the importance of the environment and the depth and breadth of the U.S.-India partnership to address environmental issues of common concern. India has witnessed more population growth in the past decade than ever before, and the U.S.—forging a partnership with Indian institutions and individuals—is helping India to address environmental outcomes of that growth. This chapter highlights just a few of the many important ways the U.S. Government is developing partnerships to achieve sustainable development in India.

Activities of the DOS and USAID represent not only the history, but are an example of continuing and growing U.S.-India cooperation on environmental issues. With its long experience working on India's developmental challenges, USAID's response to changing political and economic climates has been swift and specific. Over the years, USAID's environmental portfolio has focused primarily on the interface between energy and environment. The focus evolved over time from infrastructure development to science and technology promotion to

energy conservation and commercialization and greenhouse gas mitigation. USAID's promotion of clean energy technologies and energy efficiency helped manage emissions of CO<sub>2</sub> and other greenhouse gases while the economy has grown.

Controlling greenhouse gas emissions in India will have multiple benefits for the global environment as well as for human health in India. In addition, U.S. activities will help address global climate change issues, which in turn will have a very positive, though indirect, and long-term impact on forestry and biodiversity issues in India. If the climate continues to warm, this could have a detrimental impact on Indian coastal zones through inundation, increased flooding or salt water contamination. Agricultural yields could be depressed, resulting in more and more land being used to cultivate less and less food. In extreme cases, ecosystems could be altered significantly enough to further endanger threatened endemic species.

To help counter these threats and further advance bilateral cooperation a suite of new activities has been launched under the "U.S.-India Climate Change Partnership" led by the DOS and the Indian Ministry of Environment and Forests (MOEF). Through its role of helping to coordinate and fund a wide

U.S.-AEP



*The U.S. has funded water harvesting projects in rain deficient areas*

range of projects and providing programmatic support to other U.S. Government agencies, USAID has facilitated a stronger and more enduring partnership between India and the United States to address environmental issues. The DOS has been equally as active, addressing policy issues with the Government of India. A strong partnership has been forged with the U.S. Department of Energy working with clean coal technologies and in the new exciting field of hydrogen energy. This will help place India on the map where economic development, cutting-edge technology, and environmental conservation walk hand in hand. Another strong partnership has been created with the U.S. Environmental Protection Agency (EPA). The EPA in India, facilitated by the U.S.-Asia Environmental Partnership (U.S.-AEP), strategically supports the growing cooperation between the EPA and MOEF on critical environmental issues, such as urban air quality, water quality, environmental compliance and enforcement and the management of toxics. A more complete discussion of U.S. programs addressing climate change and clean energy technologies can be found in the "Energy" chapter.

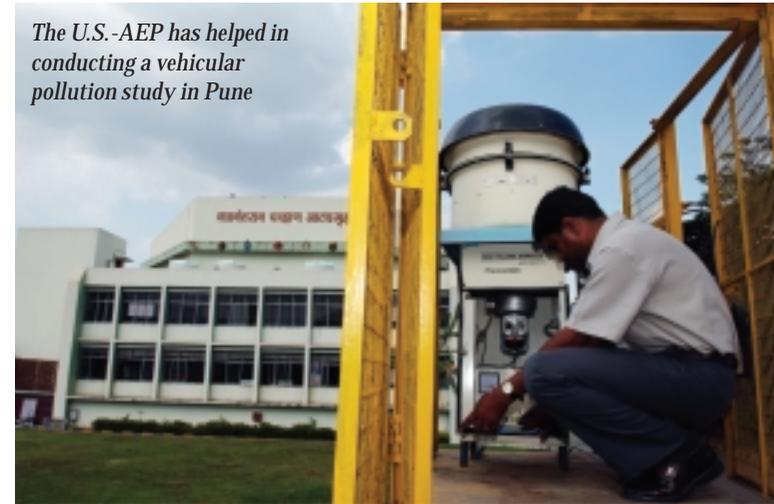
President Bill Clinton's visit to India in March 2000 highlighted and contributed to the ongoing environmental transformation. Following this significant visit, India's Environment Minister T.R. Baalu and EPA Administrator Christine Todd Whitman signed a five-year bilateral Memorandum of Understanding (MoU) between India's MOEF and the U.S. EPA on January 16, 2002. The MoU kicked off several key initiatives in Indian cities, such as the air pollution management program in Pune, which is an effort to introduce science-based models to improve urban air quality management strategies in one of the most critically air-polluted cities in India.

People and partnerships help keep U.S.-India relations on the move. The range of operations at the people-to-people level is remarkable, embracing ambitious plans to modernize Calcutta's water supply, as well as modest programs to redesign the humble cycle rickshaw. A U.S.-AEP supported hydrogen technology expert, Krishna Sapru, visited India during her vacation to work on development of a hydrogen-scooter. She commented, "People listen. They are not cynical. Their needs are modest. They are receptive to change. It is a situation where, like in any good environmental partnership, science and humanity overlap."

### PUNE TAKES THE FIRST STEP AGAINST POLLUTION

The most congested parts of Pune are ideal locations for an experiment that could change the quality of life in hundreds of towns across India. As part of the Indian Government's MOU with the EPA, the Pune Municipal Corporation (PMC) and U.S.-AEP have conducted the first International Vehicular Emission Model (IVEM) study in India. The data will be used to devise a workable air quality management model for Pune and, ideally, extrapolate its results to support similar efforts in other cities. The study involved international and local partners in Pune that worked together to model the vehicle fleet on the roads of Pune. The University of California at Riverside, along with Global Sustainable System Research, designed the IVEM, an EPA publicly available computer model that estimates emissions from vehicles. To collect data on the Pune fleet, the University of California team involved many volunteers, PMC staff, local NGOs, Pune University, fuel and automotive companies, and interested citizens to characterize the traffic fleet and chart its patterns via Global

The U.S.-AEP has helped in conducting a vehicular pollution study in Pune



Positioning Systems (GPS). The information that was gathered in the study has been used to develop a model for Pune where vehicular or fuel data can be entered by policymakers and the impact on emissions can be determined in a scientific, yet cost effective, manner.

### INDIA'S FIRST EVER GREEN BUSINESS CENTRE

The Green Business Centre (GBC) in Hyderabad promises to be a brick-and-mortar symbol of U.S.-India partnership on the environment. The GBC, located in this high-tech city, has received the prestigious LEED's (Leadership in Energy and Environmental Design) Platinum Rating, the highest rating given by the U.S. Green Building Council, one of the world's foremost bodies supporting environment-friendly architecture. The GBC is unique in concept and design. It houses experts in energy efficiency, water management, recycling technologies and green building. Built using fly-ash bricks, GBC is an eco-friendly building that not only meets global standards in green design, but one that also belongs to its local landscape.

The stakeholders in GBC are the Confederation of Indian Industry (CII), the Andhra Pradesh government, USAID and the House of Godrej, which contributed Rs 22.65 crore (\$5 million) for its construction. CII takes this initiative seriously and plans to set up 10 more GBCs in India by 2005.



USAID has a stake in the GBC

Energy Conversion Devices Inc. in the U.S. and Bajaj Auto in India are working on a hydrogen-fueled scooter.

### UNIQUE FEATURES

#### THE GREEN BUSINESS CENTRE IS A BUILDING LIKE FEW OTHERS

- The GBC is a model green building, from construction outside to activity within.
- The GBC has experts in environment protection who consult with industry.
- GBC is 50-60% more energy efficient than other buildings, uses solar energy for 25% power generation .
- It has been constructed using bricks made of fly-ash, a waste material from nearby power plants.
- A "green roof" of grass and vegetation keeps the building cool.



Ajay Singh, of NYCT, at a Delhi Metro site where he is helping to make it a model for future transit systems



## FROM THE NEW YORK SUBWAY TO THE DELHI METRO

When U.S.-AEP approached Ajay Singh, the chief environmental and sustainability officer for New York City Transit (NYCT), to work with the Delhi Metro, it was the perfect choice. Singh joined NYCT in 1985 as an assistant mechanical engineer, part of a team that helped it obtain ISO 14001 certification. NYCT was the first transport system to receive the rating. Working together in 2002, NYCT and the Delhi Metro charted a road map for the Delhi Metro to attain ISO 14001. Achieving this standard is testimony to both the U.S.-India partnership and the Delhi Metro’s commitment to environmental stewardship. The Delhi Metro plans to adapt NYCT features such as offices that consume less power and paper, building stations that use solar panels, and recycling close to 85% of construction waste. Setting standards early on, Singh believes, gave the Delhi Metro an advantage and establishes it as a model network to be emulated by mass transit systems throughout the world.

## HYDROGEN—THE FUEL THAT COULD CHANGE LIVES

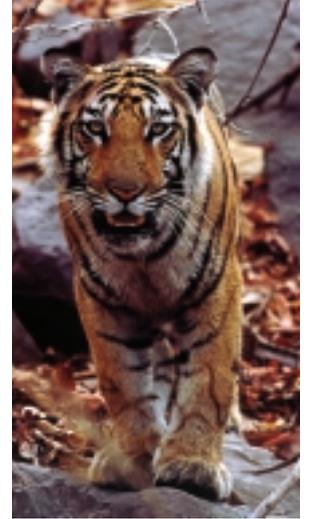
Scientists believe hydrogen could change the way the world works and goes to work. India’s engagement with hydrogen technologies is on the threshold of a critical breakthrough. A collaboration between Energy Conversion Devices (ECD) Inc. in the United States, experts in solid-state hydrogen storage technology, and the automobile manufacturer Bajaj Auto in India seeks to identify alternative fuel sources to run vehicles. The project, whose ultimate goal is to respond to consumer needs in India with an environmentally friendly power source, seeks to develop non-polluting, hydrogen-fueled three-wheelers. ECD has identified the hydrogen three-wheeler as a potential instrument for commercialization and India as a key market. ECD experts in hydrogen storage technology are collaborating with Indian scientists. The hydrogen three-wheeler has the potential to reinvent the way India looks at one of its most challenging environment problems. Using conventional fuel, two- and three-wheelers and power generators are a major source of pollution. Fueled by hydrogen using on-board metal hydride storage units, hydrogen three-wheelers could be agents of change and a transformational technology for the future.

Worldwide,  
only New York  
City Transit  
and Delhi  
Metro have  
won the ISO  
14001  
standard.

## WILDLIFE WITHOUT BORDERS

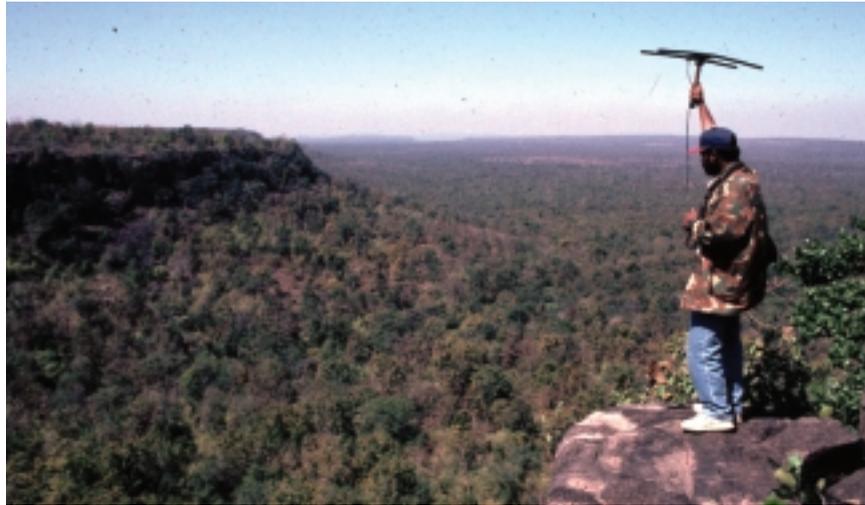
This we know: the Earth does not belong to man, man belongs to the Earth. To conservationists around the world, these lines constitute an article of faith. They reflect the assumption that Earth’s rich biodiversity is not a treasure that belongs to individual nations. Any attack on the world’s endangered species is an attack on nature itself. Its defense too, therefore, becomes a global responsibility.

The nature of the U.S.-India partnership in the field of wildlife conservation is a variation of this theme. Fittingly, the motto of the international outreach program of the U.S. Fish and Wildlife Service (USFWS), the chief driver of U.S.-India collaboration in wildlife conservation, is “Wildlife Without Borders.” India, home to 21,000 species of plants, 500 varieties of mammals, and 1,500 types of birds, is ranked sixth among global biodiversity centers. But the demands of modernization have placed a constant challenge on the country’s dazzling variety of species.



The southern arm of the Western Ghats (below) with its fragmented forest areas





Bear tracking in Panna Tiger Reserve in Madhya Pradesh

## LANDMARK TEST CASE

The creation of India's first wildlife forensic laboratory at the Wildlife Institute of India in Dehradun marked a major step in the long battle against poaching and animal smuggling. It was established with USFWS'



collaboration, after field visits by Indian scientists to facilities in the U.S. B.C. Choudhury, Nodal Officer, WII-USFWS Collaborative Project, who plans the development of regional labs, says, "We have to ensure that cases against animal smugglers are so fool-proof that convictions can take place."

The United States' Endangered Species Act of 1973 gave the USFWS the mandate to work toward the protection of endangered animals worldwide. Joining hands with the Indian Government and private organizations through the Science Section of the U.S. Embassy, USFWS focused on wildlife research and management, habitat protection and conservation. For funds, it tapped into a pool of U.S.-owned Indian rupees, which could not be converted into dollars and were to be used to support projects benefiting both India and the U.S. The Indian Government identified key institutions to act as collaborators, the main bodies being the privately-funded Bombay Natural History Society (BNHS) and the government-run Wildlife Institute of India (WII).

The partnership of USFWS with BNHS, the pre-eminent Indian center for ecological studies, was set up in 1983 and revolved around projects to monitor the movement and habitat of birds, ecological studies of the Keoladeo National Park, and the habitats of the Great Indian Bustard and the Siberian crane. The USFWS' interaction with WII concentrated on capacity building and training in modern research techniques.

India's first (and only) forensic wildlife laboratory at the WII was a by-product of this partnership, along with the Wildlife Health Cooperative, a network of experts on wildlife health care. Ongoing projects include research in the ecology of the sloth bear in the Panna Tiger Reserve and the impact of fragmentation on the biodiversity of the



U.S.-India cooperation could help maintain the elephant population in India

## MANY GOOD CAUSES

### THE USFWS AND ITS INDIAN PARTNERSHIPS CURRENTLY IN ACTION

- Ecology of Shola and Alpine grasslands, with BNHS.
- Biodiversity conservation of freshwater wetlands, a three-year project with the Institute for Restoration of Natural Environment.
- Identification and acquisition of Elephant Migration Corridors as protected areas, with the Wildlife Trust of India
- Training of tiger conservationists, with WII.
- Monitoring nest sites of vultures in the Himalayan foothills, with BNHS.
- Survey and conservation of Hoolock Gibbon in the Northeast India, with WII.

Western Ghats. It is widely understood that the protection of endangered species, especially the flagship species in a region, automatically extends to the entire habitat of those species. For instance, preserving the habitat of rhinos in Kaziranga National Park in Assam ensures that animals like the swamp deer are preserved. Fred Bagley, a U.S. Fish and Wildlife biologist, says the Kaziranga project is a "model program" as far as providing security and sustaining species is concerned.

U.S.-India links in the field of wildlife conservation are at a crossroads today with the exhaustion of the rupee funds. The concentration of dollar-funding will veer toward species like tiger, rhino and elephant, but finding ways to continue its developmental efforts at the grassroots level will be the key challenge for the USFWS and Indian conservationists. The Indo-U.S. Science Forum, with an endowment of Rs 4.52 crore (\$1 million), could act as one avenue. But the strongest indication of a new direction comes from the proposal to create a Bi-national Science Foundation, to be funded with a Rs 226.25 crore (\$50 million) initial grant from India and the U.S. Bagley echoes the thoughts of many stakeholders in the U.S.-India conservation partnership when he says, "There is a lot of concern in the U.S. for conservation in India. We don't want our activities to be dropped. We want them to be sustained."

In all its activities, the Science Section of the U.S. Embassy has played a critical role in promoting environment-friendly policies in India, matching Indian and U.S. technical agencies and creating a climate where environment and conservation cooperation can thrive.